
SOLID AND HAZARDOUS WASTE APPENDIX

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The Toxics Release Inventory (TRI) provides state reports about releases and transfers of chemicals and compounds. Each report contains overall state information regarding releases and transfers, a list of the top five chemicals released or transferred, off-site, in that state, and a list of the top ten facilities that released or transferred, off-site, the greatest amount of chemicals. All chemical and facility information was taken directly from the Envirofacts TRI database maintained by the U.S. Environmental Protection Agency (EPA).

TRI State Report Descriptions

This is a brief description of the TRI State Reports. A brief explanation of each column heading is given.

State Information

This is general TRI information relating to the state.

- **Total Facilities**—The total facilities reporting in that state.
- **Total Forms**—The total number of forms submitted. Each form has a unique Document Control Number.
- **Total Forms A's**—The total number of short forms submitted.
- **Transfer into State**—The total amount of waste chemicals (in pounds) transferred into the state.
- **Transfer out of State**—The total amount of waste chemicals (in pounds) transferred out of the state.
- **Population**—The population of a state as reported by the U.S. Census Bureau for 1990.

Reported Releases and Waste Management Activities

On-Site Releases

The amount of chemicals released as reported by facilities in that state.

- **Air Emissions**—Total on-site releases of a particular type in pounds where the environmental medium = 'AIR'.
- **Surface Water Discharges**—Total on-site releases of a particular type in pounds where the environmental medium = 'WATER'.
- **Underground Injection**—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ I' or 'UNINJ IIV'.
 - **Class I Wells**—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ I'.
 - **Class II-V Wells**—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ IIV'.
- **Releases to Land**—Total on-site releases of a particular type in pounds where the environmental medium = 'RCRA C' or 'OTH LANDF'.
 - **RCRA Subtitle C Landfills**—Total on-site releases of a particular type in pounds where the environmental medium = 'RCRA C'.
 - **Other On-Site Land Releases**—Total on-site releases of a particular type in pounds where the environmental medium = 'OTH LANDF'.
- **Total On-Site Releases**—The sum of Air Emissions, Surfaces Water Discharges, Underground Injection, and Releases to Land.
- **Transfer Off-Site to Disposal**—Total off-site transfer of a particular type in pounds for disposal.

- Total On and Off-site Releases—Sum of total on-site releases and off-site transfers.

Off-Site Releases (Transfers Off-site to Disposal)

- POTW's (metals and metal compounds)—Total transfer of metals and metal compounds in pounds to POTW's as an off-site releases.
- Transfer Off-Site to Disposal—Total off-site transfer of a particular type in pounds for disposal.
- Total Off-Site Releases—Sum of total POTW's (metals and metal compounds) and off-site transfers to disposals.
- Total Releases—Sum of total on-site and off-site releases.

Source Reduction Activities

- Energy Recovery On-Site—The total amount of the toxic chemical in waste burned for energy recovery onsite, reported in section 8.2 of Form R.
- Energy Recovery Off-Site—The total amount of the toxic chemical in waste sent offsite to be burned for energy recovery, reported in section 8.3 of Form R.
- Recycling On-Site—The total amount of the toxic chemical recycled onsite, reported in section 8.4 of Form R.
- Recycling Off-Site—The total amount of the toxic chemical sent offsite for recycling, reported in section 8.5 of Form R.
- Treatment On-Site—The total amount of the toxic chemical treated onsite, reported in section 8.6 of Form R.
- Treatment Off-Site—The total amount of the toxic chemical treated offsite, reported in section 8.7 of Form R.
- Total Releases—The total amount of the toxic chemical released due to production related events by the facility to all environmental media both on and off site, reported in section 8.1 of Form R.

- Total Production Related Waste Managed—The sum of recycling, energy recovery, treatment, and total releases.

Transfers Off-Site to POTW's

- Metals and Metal Compounds—Total transfer of metals and metals compounds in pounds to POTW's as an off-site releases.
- Non-Metal TRI Chemicals—Total off-site transfer of non-metals in pounds to a POTW's as an off-site release.
- Total Transfers Off-site to POTW's—Sum of total off-site transfers of Metals and Non-Metals to POTW's.

Top Ten Chemicals for Air/Water/Land/Underground Injection Releases and the Top Ten Chemicals for Total On and Off-Site Releases

The waste chemicals that are most released into the environment for that state.

- Chemical—The name of the chemical.
- Air Emissions—Total on-site releases of a particular type in pounds where the environmental medium = 'AIR'.
- Surface Water Discharges—Total on-site releases of a particular type in pounds where the environmental medium = 'WATER'.
- Underground Injection—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ I' or 'UNINJ IIV'.
 - Class I Wells—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ I'.
 - Class II-V Wells—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ IIV'.
- Releases to Lands—Total on-site releases of a particular type in pounds where the environmental medium = 'RCRA C' or 'OTH LANDF'.

- RCRA Subtitle C Landfills—Total on-site releases of a particular type in pounds where the environmental medium = ‘RCRA C’.
- Other On-Site Land Release—Total on-site releases of a particular type in pounds where the environmental medium = ‘OTH LANDF’.
- Total On-site Releases—The sum of Air Emissions, Surfaces Water Discharges, Underground Injection, and Releases to Land.
- Transfers Off-Site to Disposal—Total off-site transfer of a particular type in pounds for disposal.
- Total On and Off-site Releases—Sum of total on-site releases and off-site transfers.
- Underground Injection—Total on-site releases in pounds by a facility where the environmental medium = ‘UNINJ I’ or ‘UNINJ IIV’.
- Class I Wells—Total on-site releases in pounds by a facility where the environmental medium = ‘UNINJ I’.
- Class II-V Wells—Total on-site releases in pounds by a facility where the environmental medium = ‘UNINJ IIV’.
- Releases to Land—Total on-site releases in pounds by a facility where the environmental medium = ‘RCRA C’ or ‘OTH LANDF’.
- RCRA Subtitle C Landfills—Total on-site releases in pounds by a facility where the environmental medium = ‘RCRA C’.
- Other On-Site Land Releases—Total on-site releases in pounds by a facility where the environmental medium = ‘OTH LANDF’.
- Total On-site Releases—The sum of Air Emissions, Surfaces Water Discharges, Underground Injection, and Releases to Land by a facility.
- Transfers Off-Site to Disposal—Total off-site transfer in pounds for disposal by a facility.
- Total On and Off-site Releases—Sum of total on-site releases and off-site transfers by a facility.

Top Ten Facilities for Air/Water/Land/Underground Injection Releases and the Top Ten Facilities for Total On and Off-site Release

The facilities that release the most waste chemicals into the environment for that state.

- Facility—The name of the facility.
- City, County—The city name and the county name where the facility is located.
- Air Emissions—Total on-site releases in pounds by a facility where the environmental medium = ‘AIR’.
- Surface Water Discharge—Total on-site releases in pounds by a facility where the environmental medium = ‘WATER’.
- Underground Injection—Total on-site releases in pounds by a facility where the environmental medium = ‘UNINJ I’ or ‘UNINJ IIV’.
- Releases to Land—Total on-site releases in pounds by a facility where the environmental medium = ‘RCRA C’ or ‘OTH LANDF’.
- Total On-site Releases—The sum of Air Emissions, Surfaces Water Discharges, Underground Injection, and Releases to Land by a facility.
- Transfers Off-Site to Disposal—Total off-site transfer in pounds for disposal by a facility.
- Total On and Off-site Releases—Sum of total on-site releases and off-site transfers by a facility.



1999 Toxics Release Inventory

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Reported Releases and Waste Management Activities (in pounds)

	Original Industries	New Industries	Total
On-site Releases	48,545,330	78,582,271	127,127,601
Air Emissions	5,368,777	1,152,322	6,521,099
Surface Water Discharges	36,047	10	36,057
Underground Injection Class I Wells	0	0	0
Underground Injection Class II-V Wells	0	0	0
On-site Land Releases to RCRA Subtitle C Landfills	2,298	0	2,298
Other On-site Land Releases	43,138,208	77,429,939	120,568,147
Off-site Releases (Transfers Off-site to Disposal)*	114,245	376,802	491,047
Total On- and Off-site Releases	48,659,575	78,959,073	127,618,648
Recycled On-site	36,466,718	0	36,466,718
Recycled Off-site	180,530	33,753	214,283
Energy Recovery On-site	7,559,811	0	7,559,811
Energy Recovery Off-site	22,434	0	22,434
Treated On-site	7,916,220	2,893,460	10,809,680
Treated Off-site**	30,689	1,439	32,128
Quantity Released On- and Off-site***	49,842,158	78,950,223	128,792,381
Total Production-related Waste Managed	102,018,560	81,878,875	183,897,435
Total Non-production-related Waste Managed	6,898	17	6,915

Transfers Off-site for Further Waste Management/Disposal

Recycling	232,658	6,753	239,411
Energy Recovery	23,611	0	23,611
Treatment	23,412	1,689	25,101
Publicly Owned Treatment Works (POTWs)	11,285	0	11,285
Metals and Metal Compounds*	10	0	10
Non-metal TRI Chemicals**	11,275	0	11,275
Other Off-site Transfers***	0	0	0
Off-site Transfers to Disposal (not including metals to POTWs)	1,368,210	376,802	1,745,012
Total Transfers Off-site for Further Waste Management/Disposal	1,659,176	385,244	2,044,420

* Transfers to POTWs of metals and metal compounds are included in off-site releases. Excludes transfer amounts sent for disposal to other TRI facilities reporting that amount released on-site.

** Transfers to POTWs of non-metals are included in treated off-site waste management activity.

*** Excludes non-production-related releases; e.g. releases due to catastrophic events or remedial actions.

****Transfers reported without a valid waste management code.

For More Information . . .

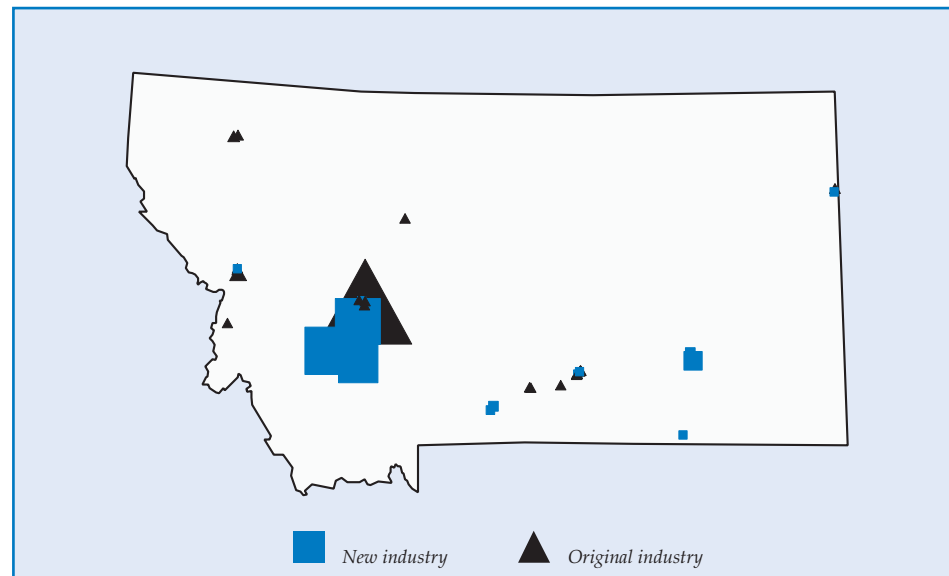
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To obtain TRI data use
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(202) 260-1531
Fax: (202) 401-2347



The largest marker in the state map represents the largest facility for on-site releases in the state of Montana. All markers are proportionally-sized to represent the on-site releases at each facility within this state.

State/TRI Data

Population	882,779
Square Miles	145,556
Total Facilities	42
Total Forms	253
Form As	31

	Original Industries	New Industries	Total
National Rank for Total On- and Off-site Releases*			
Rank	19	9	18
Pounds	48,659,575	78,959,073	127,618,648
National Rank for Total On-site Releases**			
Rank	17	9	16
Pounds	48,545,330	78,582,271	127,127,601
National Rank for Total Releases within State***			
Rank	20	9	18
Pounds	48,552,624	78,959,071	127,511,695
National Rank for Production-related Waste Managed			
Rank	34	19	34
Pounds	102,018,560	81,878,875	183,897,435

* Includes transfers out-of-state for disposal. Excludes transfer amounts sent for disposal to other TRI facilities reporting that amount released on-site.

** Includes amounts released at the facility. Excludes amounts transferred to other sites.

*** Excludes transfers for disposal sent out-of-state or sent to other TRI facilities within the state reporting that amount released on-site.



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On-site and Off-site Releases for Top Ten Chemicals Ranked on Total Releases in the State (Original Industries)

CAS Number	Chemical	On-site Releases				Off-site Releases	Total Releases in the State**	Off-site Transfers to Disposal		
		Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	On-site Releases to Land Pounds	Transfers Off-site to Disposal* Pounds		Transferred Into State Pounds	Transferred Within State Pounds	Transferred Out of State Pounds
--	Zinc compounds	10,562	43	0	35,577,360	345,316	35,933,281	0	5	345,311
--	Lead compounds	16,454	1	0	2,554,272	580,236	3,150,963	0	0	580,236
67-56-1	Methanol	3,088,962	16,000	0	270	0	3,105,232	0	0	0
--	Manganese compounds	786	3	0	2,976,183	10,839	2,987,811	0	0	10,839
--	Copper compounds	8,519	7	0	1,444,304	15,697	1,468,527	0	5	15,692
7664-41-7	Ammonia	781,138	13,430	0	14,105	436	809,109	0	0	436
50-00-0	Formaldehyde	465,261	2,800	0	0	0	468,061	0	0	0
--	Cadmium compounds	1,241	1	0	11,403	359,346	371,991	0	0	359,346
--	Arsenic compounds	2,788	63	0	281,882	34,971	319,704	0	0	34,971
7664-39-3	Hydrogen fluoride	228,730	0	0	0	0	228,730	0	0	0

* Excludes amounts transferred to other TRI facilities in the state reporting that amount released on-site.

** The chemical ranking is based on the amounts in this column.

On-site and Off-site Releases for Top Ten Chemicals Ranked on Total Releases in the State (Seven New Industries)

CAS Number	Chemical	On-site Releases				Off-site Releases	Total Releases in the State**	Off-site Transfers to Disposal		
		Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	On-site Releases to Land Pounds	Transfers Off-site to Disposal* Pounds		Transferred Into State Pounds	Transferred Within State Pounds	Transferred Out of State Pounds
--	Zinc compounds	4,904	0	0	21,405,495	3,900	21,414,299	0	3,900	0
--	Copper compounds	2,687	0	0	15,177,982	3,900	15,184,569	0	3,900	0
7440-50-8	Copper	1,213	0	0	11,103,779	0	11,104,992	0	0	0
--	Lead compounds	1,260	0	0	10,749,000	1,601	10,751,861	0	1,600	1
7440-47-3	Chromium	581	0	0	7,461,120	0	7,461,701	0	0	0
--	Barium compounds	109,987	5	0	3,995,701	145,600	4,251,293	0	145,600	0
7440-02-0	Nickel	810	0	0	2,280,350	0	2,281,160	0	0	0
--	Manganese compounds	10,898	5	0	1,734,026	67,700	1,812,629	0	67,700	0
--	Arsenic compounds	500	0	0	1,530,000	1,250	1,531,750	0	1,250	0
7647-01-0	Hydrochloric acid	579,916	0	0	0	0	579,916	0	0	0

* Excludes amounts transferred to other TRI facilities in the state reporting that amount released on-site.

** The chemical ranking is based on the amounts in this column.



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On- and Off-site Releases for Top Ten Facilities Ranked on Total On-site Releases in the State (Original Industries)

Facility, City, County	On-site Releases						Total On-site Releases* Pounds	Off-site Releases (Transfers Off-site to Disposal)	
	Underground Injection			On-site Releases to Land				Transferred Within State Pounds	Transferred Out of State Pounds
	Air Emissions Pounds	Surface Water Discharges Pounds	Class I Wells Pounds	Class II-V Wells Pounds	RCRA Subtitle C Landfills Pounds	Other On-site Land Releases Pounds			
ASARCO Inc., East Helena, Lewis and Clark	50,525	1,660	0	0	0	43,058,183	43,110,368	0	1,350,974
Stone Container Corp., Missoula, Missoula	3,298,705	24,400	0	0	0	285	3,323,390	0	0
Plum Creek MDF Inc., Columbia Falls, Flathead	741,550	0	0	0	0	0	741,550	0	0
Columbia Falls Aluminum Co. L.L.C., Columbia Falls, Flathead	300,197	0	0	0	0	81	300,278	0	0
Holly Sugar Corp., Sidney, Richland	239,000	0	0	0	0	10,000	249,000	0	0
Louisiana-Pacific Corp. Missoula Particleboard, Missoula, Missoula	166,000	0	0	0	0	0	166,000	0	0
Conoco Inc. Billings Refy., Billings, Yellowstone	129,508	616	0	0	0	0	130,124	0	0
Western Sugar Co.130130, Billings, Yellowstone	64,000	3,400	0	0	0	42,100	109,500	0	0
ExxonMobil Billings Refy., Billings, Yellowstone	100,867	5,686	0	0	0	9	106,562	44	4,013
Montana Refining Co., Great Falls, Cascade	75,755	0	0	0	0	0	75,755	0	0

*The facility ranking is based on the amounts in this column; these quantities exclude transfers out of state.

On- and Off-site Releases for Top Ten Facilities Ranked on Total On-site Releases in the State (Seven New Industries)

Facility, City, County	On-site Releases						Total On-site Releases* Pounds	Off-site Releases (Transfers Off-site to Disposal)	
	Underground Injection				On-site Releases to Land			Transferred Within State Pounds	Transferred Out of State Pounds
	Air Emissions Pounds	Surface Water Discharges Pounds	Class I Wells Pounds	Class II-V Wells Pounds	RCRA Subtitle C Landfills Pounds	Other On-site Land Releases Pounds			
Montana Resources, Butte, Silver Bow	1,000	0	0	0	0	25,082,000	25,083,000	0	0
Montana Tunnels Mining Inc., Jefferson City, Jefferson	28,014	0	0	0	0	24,082,370	24,110,384	0	0
Golden Sunlight Mines Inc., Whitehall, Jefferson	111,632	0	0	0	0	20,376,450	20,488,082	0	0
PP&L Montana Colstrip Steam Electric Station, Colstrip, Rosebud	285,185	0	0	0	0	6,293,900	6,579,085	156,500	2
SMC Nye Mine Site, Nye, Stillwater	1,101	0	0	0	0	963,225	964,326	0	0
Colstrip Energy L.P. Rosebud Power Plant, Colstrip, Rosebud	613,223	0	0	0	0	344,454	957,677	0	0
SMC East Boulder Project, Mc Leod, Sweet Grass	0	0	0	0	0	249,523	249,523	0	0
J.E. Corette Steam Electric Station, Billings, Yellowstone	62,350	10	0	0	0	0	62,360	80,000	0
Lewis & Clark Station, Sidney, Richland	25,196	0	0	0	0	25,800	50,996	140,300	0
Conoco Helena Product Terminal, Helena, Lewis and Clark	13,109	0	0	0	0	0	13,109	0	0

*The facility ranking is based on the amounts in this column; these quantities exclude transfers out of state.



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Total Production-related Waste for Top Ten Facilities Ranked on Quantity Released On- and Off-site (Original Industries)

Facility, City, County	Recycled On-site Pounds	Recycled Off-site Pounds	Energy Recovery On-site Pounds	Energy Recovery Off-site Pounds	Treated On-site Pounds	Treated Off-site Pounds	Quantity Released On- and Off-site*	Total Production- related Waste Managed Pounds	Total Non- production- related Waste Managed Pounds
ASARCO Inc., East Helena, Lewis and Clark	28,916,883	0	0	0	0	0	44,454,865	73,371,748	6,467
Stone Container Corp., Missoula, Missoula	0	0	7,084,400	0	4,153,500	0	3,305,754	14,543,654	0
Plum Creek MDF Inc., Columbia Falls, Flathead	0	0	0	0	0	0	740,300	740,300	0
Columbia Falls Aluminum Co. L.L.C., Columbia Falls, Flathead	6,342,848	0	0	0	0	0	300,278	6,643,126	0
Holly Sugar Corp., Sidney, Richland	0	0	0	0	0	0	249,000	249,000	0
Louisiana-Pacific Corp. Missoula Particleboard, Missoula, Missoula	0	0	0	3,700	0	0	166,000	169,700	0
Conoco Inc. Billings Refy., Billings, Yellowstone	0	26,923	0	24	68,890	4	118,990	214,831	0
ExxonMobil Billings Refy., Billings, Yellowstone	0	12,000	250,000	0	2,298,877	209	110,812	2,671,898	6
Western Sugar Co.130130, Billings, Yellowstone	0	0	0	0	4,000	0	105,000	109,000	0
Montana Refining Co., Great Falls, Cascade	216,100	0	0	0	0	11,079	76,440	303,619	0

*The facility ranking is based on the amounts in this column; these quantities exclude non-production-related releases.

Total Production-related Waste for Top Ten Facilities Ranked on Quantity Released On- and Off-site (Seven New Industries)

Facility, City, County	Recycled On-site Pounds	Recycled Off-site Pounds	Energy Recovery On-site Pounds	Energy Recovery Off-site Pounds	Treated On-site Pounds	Treated Off-site Pounds	Quantity Released On- and Off-site*	Total Production- related Waste Managed Pounds	Total Non- production- related Waste Managed Pounds
Montana Resources, Butte, Silver Bow	0	0	0	0	0	0	25,066,200	25,066,200	0
Montana Tunnels Mining Inc., Jefferson City, Jefferson	0	27,000	0	0	0	0	24,110,370	24,137,370	7
Golden Sunlight Mines Inc., Whitehall, Jefferson	0	0	0	0	0	0	20,424,110	20,424,110	5
PP&L Montana Colstrip Steam Electric Station, Colstrip, Rosebud	0	0	0	0	2,500,000	0	6,831,112	9,331,112	0
Colstrip Energy L.P. Rosebud Power Plant, Colstrip, Rosebud	0	0	0	0	0	0	957,677	957,677	0
SMC Nye Mine Site, Nye, Stillwater	0	0	0	0	20,460	0	943,866	964,326	0
SMC East Boulder Project, Mc Leod, Sweet Grass	0	0	0	0	0	0	249,523	249,523	0
Lewis & Clark Station, Sidney, Richland	0	0	0	0	238,000	0	191,040	429,040	4
J.E. Corette Steam Electric Station, Billings, Yellowstone	0	0	0	0	135,000	0	142,000	277,000	0
Decker Coal Co., Decker, Big Horn	0	6,753	0	0	0	0	12,217	18,970	1

*The facility ranking is based on the amounts in this column; these quantities exclude non-production-related releases.